

under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments

In the Specification:

On page 73, lines 21-22, please replace the paragraph with

~~Oligonucleotide #8 (SEQ ID NO:24).- -~~

In the Title:

Please substitute the following Title of the Invention for the pending Title of the Invention:

~~Compositions of Reverse Transcriptases and Mutants Thereof - -~~

In the Claims:

Please amend the following claims:

Please substitute the following claim 119 for the currently pending claim 119:

119. (Once amended) The composition of claim 117, wherein said reverse transcriptases are selected from the group consisting of Moloney Murine Leukemia Virus (M-MLV), Avian Sarcoma-Leukosis Virus (ASLV), Rous Sarcoma Virus (RSV), Avian Myeloblastosis Virus (AMV), Rous Associated Virus (RAV), Myeloblastosis Associated Virus (MAV), and Human Immunodeficiency Virus (HIV) reverse transcriptases.

~~Please substitute the following claim 120 for the currently pending claim 120:~~

120. (Once amended) The composition of claim 117, wherein said reverse transcriptases comprise an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

Please substitute the following claim 126 for the currently pending claim 126:

C3
126. (Once amended) The composition of any one of claims 122-124, wherein at least one of said reverse transcriptase comprises an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

Please substitute the following claim 134 for the currently pending claim 134:

C4
134. (Once amended) The kit of claim 131, wherein said reverse transcriptases comprise an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

Please substitute the following claim 140 for the currently pending claim 140:

C5
140. (Once amended) The kit of any one of claims 136-138, wherein at least one of said reverse transcriptases comprises an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

Please substitute the following claim 148 for the currently pending claim 148:

C4
148. (Once amended) A recombinant ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram and said ASLV reverse transcriptase does not contain a mutation that reduces RNase H activity.

Please substitute the following claim 150 for the currently pending claim 150:

C7
150. (Once amended) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase comprises an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

Please substitute the following claim 151 for the currently pending claim 151:

151. (Once amended) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 152 for the currently pending claim 152:

152. (Once amended) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 153 for the currently pending claim 153:

153. (Once amended) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 154 for the currently pending claim 154:

154. (Once amended) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 156 for the currently pending claim 156:

156. (Once amended) A composition comprising a recombinant ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram and said ASLV reverse transcriptase does not contain a mutation that reduces RNase H activity.

Please substitute the following claim 159 for the currently pending claim 159:

159. (Once amended) The composition of claim 156, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 160 for the currently pending claim 160:]

160. (Once amended) The composition of claim 156, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 161 for the currently pending claim 161:]

161. (Once amended) The composition of claim 156, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 162 for the currently pending claim 162:]

162. (Once amended) The composition of claim 156, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 164 for the currently pending claim 164:

164. (Once amended) A kit comprising a recombinant ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram and said ASLV reverse transcriptase does not contain a mutation that reduces RNase H activity.

Please substitute the following claim 166 for the currently pending claim 166:

166. (Once amended) The kit of claim 164, wherein said ASLV reverse transcriptase comprises an ASLV α subunit, an ASLV β subunit, an ASLV $\beta p4$ subunit, or a combination thereof.

[Please substitute the following claim 167 for the currently pending claim 167:]

167. (Once amended) The kit of claim 164, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 168 for the currently pending claim 168:]

168. (Once amended) The kit of claim 164, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 169 for the currently pending claim 169:]

169. (Once amended) The kit of claim 164, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 170 for the currently pending claim 170:]

170. (Once amended) The kit of claim 164, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 175 for the currently pending claim 175:

175. (Once amended) A recombinant ASLV reverse transcriptase produced by a method comprising

- obtaining a host cell comprising one or more nucleic acid sequences encoding at least one ASLV reverse transcriptase; and
- culturing said host cell under conditions sufficient to produce said ASLV reverse transcriptase; and
- isolating or purifying said reverse transcriptase thereby obtaining said reverse transcriptase wherein said ASLV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram and said ASLV reverse transcriptase does not contain a mutation that reduces RNase H activity.

Please substitute the following claim 177 for the currently pending claim 177:

177. (Once amended) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase comprises an ASLV α subunit, an ASLV β subunit, an ASLV β p4 subunit, or a combination thereof.

C12
[Please substitute the following claim 178 for the currently pending claim 178:]

178. (Once amended) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

C13
[Please substitute the following claim 179 for the currently pending claim 179:]

179. (Once amended) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

C13 Please substitute the following claim 180 for the currently pending claim 180:

180. (Once amended) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

C13 Please substitute the following claim 181 for the currently pending claim 181:

181. (Once amended) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 183 for the currently pending claim 183:

183. (Once amended) A recombinant Avian Myeloblastosis Virus (AMV) reverse transcriptase, wherein said AMV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram.

C14 Please substitute the following claim 184 for the currently pending claim 184:

184. (Once amended) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase comprises an AMV α subunit, an AMV β subunit, an AMV $\beta p4$ subunit, or a combination thereof.

C14 Please substitute the following claim 185 for the currently pending claim 185:

185. (Once amended) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

C14 Please substitute the following claim 186 for the currently pending claim 186:

186. (Once amended) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

C14
[Please substitute the following claim 187 for the currently pending claim 187:]

187. (Once amended) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

cont

[Please substitute the following claim 188 for the currently pending claim 188:]

188. (Once amended) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

C15
Please substitute the following claim 190 for the currently pending claim 190:

190. (Once amended) A composition comprising a recombinant AMV reverse transcriptase, wherein said AMV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram.

[Please substitute the following claim 191 for the currently pending claim 191:]

191. (Once amended) The composition of claim 190, wherein said AMV reverse transcriptase comprises an AMV α subunit, an AMV β subunit, an AMV $\beta p4$ subunit, or a combination thereof.

[Please substitute the following claim 192 for the currently pending claim 192:]

192. (Once amended) The composition of claim 190, wherein said AMV

reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

C 15 Please substitute the following claim 193 for the currently pending claim 193: 193

193. (Once amended) The composition of claim 190, wherein said AMV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

C 16 Please substitute the following claim 194 for the currently pending claim 194: 194

194. (Once amended) The composition of claim 190, wherein said AMV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

C 17 Please substitute the following claim 195 for the currently pending claim 195: 195

195. (Once amended) The composition of claim 190, wherein said AMV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 197 for the currently pending claim 197:

C 18 197. (Once amended) A kit comprising a recombinant AMV reverse transcriptase, wherein said AMV reverse transcriptase has a polymerase specific activity of at least about 30,000 units per milligram.

Please substitute the following claim 199 for the currently pending claim 199:

C 19 199. (Once amended) The kit of claim 197, wherein said AMV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to

about 150,000 units per milligram.

Please substitute the following claim 200 for the currently pending claim 200:

200. (Once amended) The kit of claim 197, wherein said AMV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

C 17
C 201
Please substitute the following claim 201 for the currently pending claim 201:

201. (Once amended) The kit of claim 197, wherein said AMV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

C 18
Please substitute the following claim 202 for the currently pending claim 202:

202. (Once amended) The kit of claim 197, wherein said AMV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

Please substitute the following claim 207 for the currently pending claim 207:

207. (Once amended) A recombinant AMV reverse transcriptase produced by a method comprising

(a) obtaining a host cell comprising one or more nucleic acid sequences encoding at least one AMV reverse transcriptase; and

(b) culturing said host cell under conditions sufficient to produce said AMV reverse transcriptase; and

(c) isolating or purifying said reverse transcriptase thereby obtaining said reverse transcriptase wherein said AMV reverse transcriptase has a polymerase

specific activity of at least about 30,000 units per milligram.

[Please substitute the following claim 208 for the currently pending claim 208:]

208. (Once amended) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase comprises an AMV α subunit, an AMV β subunit, an AMV β p4 subunit, or a combination thereof.

[Please substitute the following claim 209 for the currently pending claim 209:]

209. (Once amended) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a polymerase specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 210 for the currently pending claim 210:]

210. (Once amended) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a polymerase specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

cont

[Please substitute the following claim 211 for the currently pending claim 211:]

211. (Once amended) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a polymerase specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

[Please substitute the following claim 212 for the currently pending claim 212:]

212. (Once amended) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a polymerase specific activity of about 75,000 units per milligram to about 150,000 units per milligram.